WHAT IS CLAIMED IS:

1. A method for manufacturing a built-up printed circuit board with stack type via-holes, comprising the steps of:

(a) forming a first via-hole through a first laminated copper sheet by means of a laser drill;

(b) forming a first plated layer on the first via-hole and on the first laminated copper sheet;

(c) filling the first plated via-hole with a via-hole filling material;

(d) grinding the top surface of the first via-hole filled with the via-hole filling material to level the first via-hole;

(e) forming a second plated layer on the first filled via-hole and the first plated layer to cover the first filled via-hole; and

(f) disposing a second laminated copper sheet on the second plated layer, and repeating the steps (a) to (e) to form a second via-hole.

2. The method as set forth in claim 1, wherein the laser is a CO_2 laser or an Nd-YAG laser.

3. The method as set forth in claim 1, wherein the first and second plated layers are formed by means of P/N plating

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(CAP plating).

4. The method as set forth in claim 1, wherein the via-hole filling material is filled in the via-hole by a general screen printing process.

5. The method as set forth in claim 4, wherein a portion of a poly screen corresponding to the via-hole is opened so that the via-hole filling material passes through the opened portion to fill only the via-hole during the screen printing.

6. The method as set forth in claim 1, wherein the via-hole filling material is liquefied insulating resin.

7. The method as set forth in claim 1, wherein the via-hole filling material is conductive paste.

8. The method as set forth in claim 7, wherein the conductive paste is copper paste or silver paste.

9. The method as set forth in claim 1, wherein a viscosity of the via-hole filling material is not more than 100 dPa.s.

10. The method as set forth in claim 1, wherein the

grinding step is carried out by a grinder made of ceramic buff, scotch buff, highcut buff, or belt.

11. A method for manufacturing a built-up printed circuit board with stack type via-holes, comprising the steps of:

(a) forming a first via-hole through a first laminated copper sheet by means of a laser drill;

(b) forming a first plated layer on the first via-hole and on the first laminated copper sheet;

(c) filling the first plated via-hole with a via-hole filling material;

(d) grinding the top surface of the first via-hole filled with the via-hole filling material to level the first via-hole;

(e) forming a second plated layer on the first leveled via-hole and the first laminated copper sheet to cover the first leveled via-hole;

(f) disposing a second laminated copper sheet on the second plated layer,

(g) forming a second via-hole through the second laminated copper sheet by means of the laser drill;

(h) filling the second via-hole with another via-hole filling material;

(i) grinding the top surface of the second via-hole

filled with the via-hole filling material to level the second via-hole; and

(j) forming a third plated layer on the second leveled via-hole and the second laminated copper sheet to cover the second leveled via-hole, and forming a circuit pattern on the third plated layer.

12. The method as set forth in claim 11, wherein a viscosity of the via-hole filling material is not more than 100 dPa.s.

13. The method as set forth in claim 11, wherein the filling step of filling the via-hole with the via-hole filling material is carried out using a general screen printing machine.

14. The method as set forth in claim 13, wherein the screen printing machine has a screen of not more than 250 mesh of a poly or stainless steel (SUS) sheet.

15. The method as set forth in claim 13, wherein the screen printing machine has a rubber squeegee spreading speed of not more than 150 mm/sec.

16. The method as set forth in claim 11, further

comprising:

firstly drying the printed circuit board at a low temperature of 60 to 80 ℃ for 15 to 30 minutes; and

secondly drying the printed circuit board at a high temperature of 140 to 160 ℃ for 30 to 60 minutes,

wherein the first and second drying steps are carried out after the filling step of filling the via-hole with the via-hole filling material.

17. The method as set forth in claim 11, wherein the via-hole formed by the laser drill has a diameter of 50 μm to 200 μm.

18. A built-up printed circuit board with stack type via-holes, comprising:

- a plurality of first via-holes formed through a first laminated copper sheet by means of a laser drill;

- a first plated layer formed on the first via-holes and the first laminated copper sheet;

- a filling material filled in each of the first plated via-holes;

- a second plated layer formed on the first filled via-holes and the first plated layer to cover the first filled via-holes;

- a plurality of second laminated copper sheets disposed

on the second plated layer, respectively; and

- a plurality of second via-holes formed through the second laminated copper sheets by means of the laser drill.

19. The board as set forth in claim 18, wherein the laser is a CO_2 laser or an Nd-YAG laser.

20. The board as set forth in claim 18, wherein the first and second plated layers are formed by means of P/N plating (CAP plating).

21. The board as set forth in claim 18, wherein the via-hole filling material is filled in each of the via-hole by a general screen printing process.

22. The board as set forth in claim 21, wherein portions of a poly screen corresponding to the via-holes are opened so that the via-hole filling material passes through each of the opened portions to fill only the via-holes during the screen printing.

23. The board as set forth in claim 18, wherein the via-hole filling material is liquefied insulating resin.

24. The board as set forth in claim 18, wherein the via-hole filling material is conductive paste.

25. The board as set forth in claim 24, wherein the conductive paste is copper paste or silver paste.